

Please amend claims 58-61, 63-64, and 70-76 to read as follows:

58. (Twice Amended) A method for removing one or more artifacts from a measured biological response profile, said measured biological response profile comprising measurements of a plurality of cellular constituents in a biological sample in response to a perturbation, each of said one or more artifacts comprising an artifact pattern comprising changes in measurements of said cellular constituents resulting from deviation of one or more experimental variables from desired values, said method comprising subtracting said one or more artifact patterns from the measured biological response profile, thereby removing said one or more artifacts from said measured biological response profile.

59. (Twice Amended) The method of claim 58, wherein each of the one or more artifact patterns comprises changes in amplitudes of said measurements of said cellular constituents associated with the artifact to which the artifact pattern corresponds.

60. (Twice Amended) The method of claim 58, wherein each of the one or more artifact patterns is determined by experiments with perturbations of said one or more experimental variables to which the artifact pattern corresponds.

61. (Twice Amended) The method of claim 58, wherein each of the one or more artifact patterns is determined by a cluster analysis of control biological response profiles, the control biological response profiles comprising measurements of a plurality of cellular constituents in experiments wherein said one or more experimental variables are perturbed to produce said artifact pattern.

63. (Twice Amended) The method of claim 62, wherein the scaling coefficients are determined by a method comprising determining the values of said scaling coefficients such that the value of a function of the difference between the measured biological response profile and the sum of the one or more scaled artifact patterns is minimized.

64. (Twice Amended) The method of claim 63, wherein the function is minimized by a least squares minimization.

70. (Amended) The method of claim 63 or 64, wherein the difference term associated with each cellular constituent in said function is weighted by a weighing factor, wherein said weighing factor is selected according to the significance of the measured value of said cellular constituent.

71. (Amended) A method for removing one or more artifacts from a measured biological response profile, said measured biological response profile comprising measurements of a plurality of cellular constituents in a biological sample in response to a perturbation, each of said one or more artifacts comprising changes in measurements of said cellular constituents resulting from deviation of one or more experimental variables from desired values, said method comprising subtracting an artifact template from the measured biological response profile, wherein said artifact template comprises an artifact signature having greatest similarity to said biological response profile and is obtained by a method comprising comparing said measured biological response profile to a library of artifact signatures, each of said artifact signatures comprising changes in amplitudes of measurements of said cellular constituents corresponding to different levels of said one or more experimental variables, said comparing comprising pattern matching of said measured biological response profile against said library; thereby removing said one or more artifacts from said measured biological response profile.

72. (Amended) A method for removing one or more artifacts from a measured biological response profile, said measured biological response profile comprising measurements of a plurality of cellular constituents in a biological sample in response to a perturbation, each of said one or more artifacts comprising changes in measurements of said cellular constituents resulting from deviation of one or more experimental variables from desired values, said method comprising: (a) comparing said measured biological response profile to a library of artifact signatures to generate an artifact template, each of said artifact signatures comprising changes in amplitudes of measurements of said cellular constituents corresponding to different levels of said one or more experimental variables, said artifact template comprising an artifact signature having greatest similarity to said biological response profile, said comparing comprising pattern matching of said measured biological response profile against said library; and (b) subtracting said artifact template from said

measured biological response profile, thereby removing said one or more artifacts from said measured biological response profile.

73. (Amended) The method of claim 71 or 72, wherein said comparing comprises minimizing a function of the difference between said measured biological response profile and said library of artifact signatures.

74. (Amended) The method of claim 73, wherein said function is minimized by a least squares minimization.

75. (Amended) The method of claim 73, wherein the difference term associated with each cellular constituent in said function is weighted by a weighing factor, wherein said weighing factor is selected according to the significance of the measured value of said cellular constituent.

76. (Amended) The method of claim 74, wherein the difference term associated with each cellular constituent in said function is weighted by a weighing factor, wherein said weighing factor is selected according to the significance of the measured value of said cellular constituent.

#### REMARKS

Claims 1-64, 67-69 and 70-76 were pending in the present application<sup>1</sup>. In the instant Amendment, claims 1-57 and 67-69, drawn to non-elected subject matter, have been canceled without prejudice to Applicants' right to pursue the subject matter of these canceled claims in related patent applications. Claims 58-61, 63-63, and 70-76 have been amended to more particularly point out and distinctly claim the present invention. Upon entry of the above-made amendments, claims 58-64 and 70-76 will be pending in the present application. A marked version showing changes made to the amended claims is attached hereto as Exhibit A. A clean version of the pending claims, as amended, is attached hereto as Exhibit B.

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<sup>1</sup> Claims 1-57 and 67-69 were inadvertently omitted from Exhibit A: Pending Claims to the Amendment filed October 20, 2000.